

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In the application of : O'MEARA, Cian et al.  
Serial No. : 09/740,201  
Filed : December 18, 2000  
For : Allocation Of Location-Based Orders To Mobile  
Agents  
Examiner : BOYCE, Andre D.  
Art Unit : 3623  
Confirmation No. : 4327  
Attorney Docket No. : 920673-907251

**BRIEF ON APPEAL**

Honorable Director of Patents and Trademarks  
PO Box 1450  
Alexandria, VA 22313-1450

Dear Sir,

This Appeal is from the Examiner's final Office Action dated October 14, 2010, in which claims 1 to 23 and 35 of this application were finally rejected. A Notice of Appeal was filed on February 17, 2011. Following pre-appeal brief review, it was determined to proceed with the appeal.

The appeal brief fee of \$540 pursuant to 37 C.F.R. § 41.20(b)(2) is tendered herewith, as is the fee for a three month extension of time. Further fees or credits should be applied to Deposit Account No. 12-0913.

**(i) Real Party in Interest**

The Assignee, Rockstar Bidco LP, is the real party in interest in the pending appeal.

## **(ii) Related Appeals and Interferences**

Applicants are unaware of any other appeals or interferences, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

## **(iii) Status of the Claims**

Claims 1 to 29, 35 and 36 are pending in the Application, and are set forth in the Claims Appendix.

Claims 1-23 were finally rejected in the Final Office Action of October 14, 2010.

The status of Claim 35 is not clear from the record. Claim 35 was finally rejected in the Final Office Action of October 14, 2011. The Advisory Action of January 20, 2011, indicated that a proposed amendment would be sufficient to overcome rejection of claim 35, but refused entry of the amendment on the grounds that the amendments were not deemed to place the application in better form for appeal by materially reducing or simplifying the issues. Finally, in the Notice of Panel Decision from Pre-Appeal Brief dated April 12, 2011, the Panel indicated only that claims 1-23 were rejected, and ignored claim 35. The claims, as they appeared in the August 2, 2010 response, are what are included in the Claims Appendix, but it is noted that the Examiner has agreed that the form of claim 35 in the unentered response of December 9, 2010 would overcome the only rejection of claim 35 under 35 U.S.C. § 101, so there is no issue regarding claim 35 once that amendment is entered, and claim 35 would be added to the list of allowed claims.

Claims 24-29 and 36 are allowed.

## **(iv) Status of Amendments**

Claim amendments were filed with Applicants' response of December 9, 2010, subsequent to the final rejection dated October 14, 2010, but were not entered.

The amendments were requested on several grounds including that the amendments would place the claims in condition for allowance. The Advisory Action of January 20, 2011 acknowledged that the amendment of claim 35 would place that claim in condition for allowance yet refused entry of the amendment, finding that they were not deemed to place the application in better form for appeal by materially reducing or simplifying the issues. In the Notice of Panel Decision from Pre-Appeal Brief dated April 12, 2011, the Panel indicated only that claims 1-23 were rejected, presumably agreeing that the amendment of claim 35, as proposed December 9, 2010, would make it allowable. That amendment of claim 35 will therefore be made at the appropriate time.

#### **(v) Summary of Claimed Subject-Matter**

Independent claim 1 relates to a computer-implemented method (page 8, lines 1-2; page 10, ll1-2; page 18 line 29 - page 19, line 3; Fig. 7, reference numeral 10; Fig. 9) of allocating a location-related order to one of a plurality of mobile agents (page 1, lines 4-6; page 11, lines 20-28; page 20, lines 22-27), said method being carried out by an ordering server programmed to carry out the steps of the method (page 8, lines 1-2; page 18 line 29 - page 19, line 3; Fig. 7, reference numeral 10), which comprise:

- a) maintaining a current order record identifying a first location and first time at which each agent is expected to become free to fulfill a new order (page 12, lines 22-29; page 13, lines 23-25; Figs. 2A & 2B; page 16, lines 14-29; page 17, lines 27-28 Fig. 6);
- b) maintaining a prioritized listing of locations (page 15, lines 9-10; Figs. 5A & 5B) including both scheduled locations which an agent is currently due to visit (page 15, lines 10-12; Fig. 5A; page 15, lines 28-29; Fig. 5B) and unscheduled locations which said agent is not currently due to visit (page 15, lines 12-26; Fig. 5A; page 16, lines 1-9; Fig. 5B), with locations in said listing being prioritized to rank both the scheduled and

unscheduled locations for said agent according to availability of the agent to reach each location after said first time (page 15, lines 21-26; page 16, lines 6-9), said availability having been calculated for each location irrespective of whether or not said agent is currently due to visit a particular location in said listing (page 15, lines 19-21; Fig. 5A; Fig. 5B);

- c) receiving said location-based order and recording the location and time at which said order is to be fulfilled (page 13, lines 14-21);
- d) determining from said prioritized listing of locations a suitable agent to fulfill said order (page 16, lines 6-9; page 26, lines 5-19; Fig. 9, reference numeral 34); and
- e) allocating said order to said suitable agent (page 16, lines 9-12; Fig. 9, reference numeral 36).

Independent claim 23 relates to a computer-implemented method (page 8, lines 1-2; page 10, lines 1-2; page 18 line 29 - page 19, line 3; Fig. 7, reference numeral 10; Fig. 9) of operating an ordering server (page 8, lines 1-2; page 18 line 29 - page 19, line 3; Fig. 7, reference numeral 10) for controlling location-based orders for a plurality of mobile agents (page 1, lines 4-6; page 11, lines 20-28; page 20, lines 22-27), comprising the steps of:

- a) maintaining a current order record identifying for each agent a first location and first time at which the agent is expected to become free to fulfil a new order (page 12, lines 22-29; page 13, lines 23-25; Figs. 2A & 2B; page 16, lines 14-29; page 17, lines 27-28 Fig. 6);
- b) maintaining a prioritized listing of locations (page 15, lines 9-10; Figs. 5A & 5B) including both scheduled locations which an agent is currently due to visit (page 15, lines 10-12; Fig. 5A; page 15, lines 28-29;

Fig. 5B) and unscheduled locations which said agent is not currently due to visit (page 15, lines 12-26; Fig. 5A; page 16, lines 1-9; Fig. 5B), with locations in said listing being prioritized to rank both the scheduled and unscheduled locations for said agent according to availability of the agent to reach each location after said first time (page 15, lines 21-26; page 16, lines 6-9), said availability having been calculated for each location irrespective of whether or not said agent is currently due to visit a particular location in said listing (page 15, lines 19-21; Fig. 5A; Fig. 5B); and

- c) updating said current order record and said listing for an agent when a new order has been assigned to said agent resulting in a new first location and first time being identified (page 16, line 14 - page 17, line 6; Fig. 9, reference numeral 40 and reference numeral 42).

Independent claim 35 relates to a computer program product comprising a physical data carrier in machine readable form containing instructions (page 10, lines 1-2) which when executed in an ordering server cause said ordering server to (page 8, lines 1-2; page 18 line 29 - page 19, line 3; Fig. 7, reference numeral 10):

- a) maintain for each agent a current order record identifying a first location and first time at which the agent is expected to become free to fulfil a new order (page 12, lines 22-29; page 13, lines 23-25; Figs. 2A & 2B; page 16, lines 14-29; page 17, lines 27-28 Fig. 6);
- b) maintain for each agent a prioritized listing of locations in the vicinity of said first location (page 15, lines 9-10; Figs. 5A & 5B) including both scheduled locations which an agent is currently due to visit (page 15, lines 10-12; Fig. 5A; page 15, lines 28-29; Fig. 5B) and unscheduled locations which said agent is not currently due to visit (page 15, lines 12-26; Fig. 5A; page 16, lines 1-9; Fig. 5B), with locations in said listing being

prioritized to rank both the scheduled and unscheduled locations for said agent according to availability of the agent to reach each location after said first time (page 15, lines 21-26; page 16, lines 6-9), said availability having been calculated for each location irrespective of whether or not said agent is currently due to visit a particular location in said listing (page 15, lines 19-21; Fig. 5A; Fig. 5B);

- c) receive said location-based order and recording the location and time at which said order is to be fulfilled (page 13, lines 14-21);
- d) determine from said prioritized listing of locations a suitable agent to fulfil said order (page 16, lines 6-9; page 26, lines 5-19; Fig. 9, reference numeral 34); and
- e) allocate said order to said identified agent (page 16, lines 9-12; Fig. 9, reference numeral 36).

Independent claims 24 and 36 have been allowed, and thus are not included in this summary.

#### **vi) Grounds of Rejection to be Reviewed on Appeal**

There are two issues to be considered in this appeal:

- 1) Whether claims 1 to 23 are unpatentable under 35 U.S.C. § 101 as being directed to non-statutory subject-matter;
- 2) Whether claim 35 is unpatentable under 35 U.S.C. § 101 as being directed to non-statutory subject-matter.

## (vii) Argument

### 1) Rejection of claims 1-23 under 35 U.S.C. § 101

Claims 1-23 were rejected on the basis that they were held to claim an abstract idea. The rationale for the finding was based solely on an alleged failure to meet the "machine or transformation" test (see Final Office Action dated October 14, 2011). Applicants appeal this rejection based on the following arguments, each of which independently justifies withdrawal of the rejection:

- (i) The claimed invention in any event satisfies the "machine" branch of the test
- (ii) The claimed invention in any event satisfies the "transformation" branch of the test
- (iii) The rejection was improperly based solely on the "machine or transformation" test

Before dealing with each argument in turn, Applicants wish to address the interpretation of the claims and in particular the weight to be accorded to the preamble and the refusal to admit amendments filed with the response of December 9, 2010.

However, even without entry of the response of December 9, 2010, Applicants respectfully submit that the Examiner erred in refusing to accord patentable weight to the preamble, and it is submitted that this holding was incorrect as a matter of law.

In Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999), the Court set out the law as follows.

"[A] claim preamble has the import that the claim as a whole suggests for it." Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995). If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim

preamble is "necessary to give life, meaning, and vitality" to the claim, then the claim preamble should be construed as if in the balance of the claim. Kropa v. Robie, 187 F.2d 150, 152, 88 USPQ 478, 480-81 (CCPA 1951); see also Rowe v. Dror, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997); Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989). Indeed, when discussing the "claim" in such a circumstance, there is no meaningful distinction to be drawn between the claim preamble and the rest of the claim, for only together do they comprise the "claim". If, however, the body of the claim fully and intrinsically sets forth the complete invention, including all of its limitations, and the preamble offers no distinct definition of any of the claimed invention's limitations, but rather merely states, for example, the purpose or intended use of the invention, then the preamble is of no significance to claim construction because it cannot be said to constitute or explain a claim limitation. See Rowe, 112 F.3d at 478, 42 USPQ2d at 1553; Corning Glass, 868 F.2d at 1257, 9 USPQ2d at 1966; Kropa, 187 F.2d at 152, 88 USPQ at 480-81.

The preamble of claim 1 recites that the method must be "carried out by an ordering server programmed to carry out the steps of the method". Since this statement defines **how** the method steps are to be implemented, "the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, ... is 'necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim."

The preamble of claim 23 recites a "computer-implemented method of operating an ordering server for controlling location-based orders for a plurality of mobile agents", followed by the specific method steps. Since these are steps for operating an ordering server, they clearly impose limitations on the method and give meaning to the claim. Thus for the same reasons as with claim 1, these limitations "should be construed as if in the balance of the claim".



In the event that the claim preamble is not to be accorded patentable weight, the following is also noted. Responsive to a comment in the Final Office Action that no patentable weight was accorded to the ordering server recited in the claim preamble, an amendment was submitted on December 9, 2010 which additionally recited the steps of "maintaining, in said ordering server, a current order record..." and "maintaining a prioritized listing of locations, accessible by said ordering server...". These amendments directly addressed the fact that the Examiner had given no patentable weight to the ordering server and further tied the method to that particular machine.

The Examiner refused to enter the amendments stating that they did not place the application in better form for appeal by materially reducing or simplifying the issues for appeal. The explicit recitation of the ordering server in the method steps was indicated to be an insufficient recitation of a machine or transformation, although why this was deemed to be the case was not stated.

In the event that the Board is of the view that recitation of the ordering server in the method steps, as set out in the response of December 9, 2010 or in some other wording, would serve to overcome the rejection of claims 1 and 23, then a statement to this effect under 37 CFR 41.50(c) would be appreciated.

Turning now to the three arguments submitted in favor of patentability of claims 1-23:

**(i) The claimed invention in any event satisfies the "machine" branch of the test**

The claims recite an ordering server which carries out the steps of the method, and which allocates location based orders to mobile agents. This is not a general purpose computer and rather is a particular machine to which the method is tied.

The most recent guidance issued by the USPTO is the *Interim Guidance for Determining Subject Matter Eligibility for Process Claims in View of Bilski v. Kappos*,

Federal Register, Vol. 75, No. 143, 43922; Tuesday July 27, 2010. This guidance is stated to be "a supplement to the previously issued *Interim Examination Instructions for Evaluating Subject-Matter Eligibility Under 35 U.S.C. 101* dated August 24, 2009".

For ease of reference these two sets of guidelines will be referred to herein as the "*July 2010 Interim Guidance*" and the "*August 2009 Interim Instructions*". It is clear from the foregoing that the *August 2009 Interim Instructions* still provide valid guidance for determining whether a process falls within the "machine or transformation" test, even if this is not the sole test to be used.

In the *August 2009 Interim Instructions* it was stated that:

For computer implemented processes, the "machine" is often disclosed as a general purpose computer. In these cases, the general purpose computer may be sufficiently "particular" **when programmed to perform the process steps**. Such programming creates a new machine because a general purpose computer, in effect, becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software. **To qualify as a particular machine under the test, the claim must clearly convey that the computer is programmed to perform the steps of the method** because such programming, in effect, creates a special purpose computer limited to the use of the particularly claimed combination of elements (i.e., the programmed instructions) performing the particularly claimed combination of functions. If the claim is so abstract and sweeping that performing the process as claimed would cover substantially all practical applications of a judicial exception, such as a mathematical algorithm, the claim would not satisfy the test as the machine would not be sufficiently particular. [emphasis added]

It is respectfully submitted that amended claims 1 and 23 clearly convey that the computer is programmed to perform the steps of the method. Accordingly, the methods of claims 1 and 23 thus fall squarely within the "particular machine" branch of the test.

It is further submitted that the following arguments demonstrate that the indicators set out in the *July 2010 Interim Guidance* are present:

1. *Express recitation of a machine* (i.e. the ordering server)
2. *Machine is particular* (see the argument above that a computer which is clearly stated in the claim to be programmed to carry out the method steps is a particular machine not a general machine)
3. *Machine implements the claimed steps* (see preceding point)
4. *The claim is more than a mere statement of a concept* (it sets out specific steps that must be taken, files that must be created and records that must be referred to).
5. *The claim describes a particular solution to a problem to be solved* (a particular method of allocating orders according to a defined series of steps and rules, operated by a programmed ordering server)
6. *The claim implements a concept in some tangible way* (i.e. it requires the creation and maintenance of various records in the ordering server, and the interaction of the ordering server with the outside world via specified inputs (requests) and outputs (allocating an order), in line with the method steps set forth in the claim)
7. *The performance of the steps is observable and verifiable* (the claim requires the creation and maintenance of e.g. a current order record identifying a first location and first time at which each agent is expected to become free to fulfill a new order. It can be readily and observably verified if a computer system has created and is maintaining such a record. The same is true for the prioritized listing of locations.)

**(ii) The claimed invention in any event satisfies the "transformation" branch of the test**

In addition to the above arguments, it is respectfully submitted that the invention also satisfies the "transformation" branch of the "machine or transformation" test which, while not conclusive, is held to be a useful indicator. There are two such transformations, involving two articles: (1) the ordering server, and (2) data representing agents and locations.

The ordering server is a machine or apparatus and is clearly an article. It is transformed from one state to another on each occasion that the current order record and the prioritized listing of locations are updated as required by the claims.

The data representing agents and locations are also "articles". Referring to the *August 2009 Interim Instructions*, it is stated that "An article can also be electronic data that represents a physical object or substance. For the test, the data should be more than an abstract value. Data can be specifically identified by indicating what the data represents, the particular type or nature of the data, and/or how or from where the data was obtained." The agents and the locations are clearly physical objects, and the data representing them are thus articles.

The question of whether there is a "transformation" of such data is addressed in the *August 2009 Interim Instructions* as follows: "transformation of electronic data has been found when the nature of the data has been changed such that it has a different function or is suitable for a different use."

The data representing agents is transformed, i.e. made suitable for a different use, by maintaining a current order record which identifies the first location and time at which each agent is expected to become free. The data representing locations is similarly transformed, i.e. made suitable for a different use, by maintaining the prioritized listing of locations including both scheduled locations which an agent is currently due to visit

and unscheduled locations which the agent is not currently due to visit, the locations are prioritized to rank both the scheduled and unscheduled locations for the agent according to availability of the agent to reach each location after the time at which the agent will become free (which is taken from the current order record), and the availability is calculated for each location irrespective of whether or not the agent is due to visit a particular location. Then, in the determining step, use is made of the prioritized listing to determine the agent to whom an order is to be allocated.

Such processing of data clearly represents a transformation in which simple information regarding agents, locations and scheduled orders is transformed to make it suitable to determine which agent is best placed to service a new order based on calculated times to reach even those locations which no agent was ever scheduled to visit.

In summary, claims 1 and 23 are submitted to be patent eligible as meeting the criteria of the machine branch of the test and furthermore meeting the criteria of the transformation branch of the test, both of which the Supreme Court held to be useful indicators of patent eligibility.

**(iii) The rejection was improperly based solely on the "machine or transformation" test**

In the Final Office Action dated October 14, 2010, in the detailed rejection of claim 1 on pages 1 and 2, the rationale given was that "In order for a method to be considered a "process" under section 101, a claimed process **must** [emphasis added] either: (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing." No other tests or criteria were advanced in the rejection, and thus the Office Action indicates that the "machine or transformation" test is the sole or exclusive test for patent eligibility. The Supreme Court has of course held in Bilski v. Kappos, 95 USPQ2d 1001 (2010) that this is not a valid approach to determining patent eligibility.

Nothing else in the Final Office Action supplemented this reasoning. For example, in the section entitled "Response to Arguments", the Examiner provided a bare acknowledgement that Applicants previously made two arguments, the second of which was that a rejection based solely on the "machine or transformation" test fails to properly address the enquiry set forth by the Supreme Court. However, in response to that argument, there was simply the statement: "The Examiner respectfully disagrees."

It was not indicated why the Examiner disagrees. The Examiner's rebuttal argument was directed (as regards claims 1-23) to pointing out that no patentable weight is accorded to the preamble, which is a rebuttal of the other argument, namely that the machine or transformation test was satisfied.

No other test or considerations were applied in the Final Office Action to the rejection of claims 1-23. Furthermore, no reasons were presented as to why the machine or transformation test should continue to be used as the sole enquiry for patent eligibility. The Advisory Action of January 20, 2011 failed entirely to address this shortcoming and instead (again) concentrated on whether the proposed amendments would provide a sufficient tie to a machine, again indicative that this test was being used as the sole criterion for judging patent eligibility.

The *August 2010 Interim Bilski Guidance* provided examples of additional factors which should be considered other than the machine or transformation test. It does not appear that such factors were ever considered. Without prejudice to Applicants' arguments (above) that the claims satisfy both the machine and the transformation branches of that test, the following additional indicators weigh in favor of a finding that the claims are patent eligible (quoting from the *101 Method Eligibility Quick Reference Sheet*):

- The claim is more than a mere statement of a concept.
- The claim describes a particular solution to a problem to be solved.
- The claim implements a concept in some tangible way.
- The performance of the steps is observable and verifiable.

The problem to be solved is finding a more efficient method of allocating location-based orders to agents. A particular solution is presented in the claims, involving the current order record and prioritized listing of locations, implemented on an ordering server. The concept is tangible, and the performance of the steps is observable and verifiable.

Accordingly, the subject-matter is patent-eligible when considered in line with the *August 2010 Interim Bilski Guidance*, even if the Machine or Transformation test was *not* satisfied.

The above arguments in relation to claims 1-23 also apply to claims 2-22 which each incorporate the features of claim 1.

## **2) Rejection of claim 35 under 35 U.S.C. § 101**

It appears from the Notice of Panel Decision from Pre-Appeal Brief of April 12, 2011 that the rejection of claim 35 is no longer upheld. Accordingly the following arguments are only submitted as a precaution due to the lack of clarity of the status of this claim. In the event that claim 35 is no longer rejected, this argument is moot.

The only issue with claim 35 in the Final Office Action concerned the question of whether this claim covered transitory signals. By amendment filed on December 9, 2010, Applicants sought to amend claim 35 by reciting that the computer program product comprises a "non-transitory computer-readable medium". This amendment was not entered but was simultaneously indicated to be regarded as sufficient to overcome the rejection of claim 35 (see Advisory Action dated January 20, 2011). Subsequently, in summarizing the status of claims for appeal, claim 35 was no longer listed as rejected. Presuming this to be correct, a further amendment of claim 35 will be filed at the appropriate time, unless the Examiner does so by Examiner's Amendment.

Accordingly, Applicant respectfully submits that patentability be recognized for claim 35 or that the Board's Opinion might recognize under 37 CFR 41.50(c) that this amendment overcomes any outstanding rejection of claim 35.

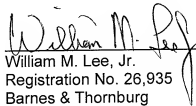
### Conclusion

It is therefore submitted, for the reasons explained above, that the rejections of claims 1-23 are in error, and should be reversed. The allowance of claims 24-29 and 36 is gratefully acknowledged, and as explained above, with the amendment of claim 35 proposed but yet to be entered by the Examiner, that claim should be in condition for allowance, as well.

This Board's determination is therefore awaited.

August 10, 2011

Respectfully submitted,



William M. Lee, Jr.  
Registration No. 26,935  
Barnes & Thornburg  
P.O. Box 2786  
Chicago, Illinois 60690-2786  
(312) 214-4800  
(312) 759-5646 (fax)



## Claims Appendix

1. A computer-implemented method of allocating a location-related order to one of a plurality of mobile agents, said method being carried out by an ordering server programmed to carry out the steps of the method, which comprise:
  - a) maintaining a current order record identifying a first location and first time at which each agent is expected to become free to fulfill a new order;
  - b) maintaining a prioritized listing of locations including both scheduled locations which an agent is currently due to visit and unscheduled locations which said agent is not currently due to visit, with locations in said listing being prioritized to rank both the scheduled and unscheduled locations for said agent according to availability of the agent to reach each location after said first time, said availability having been calculated for each location irrespective of whether or not said agent is currently due to visit a particular location in said listing;
  - c) receiving said location-based order and recording the location and time at which said order is to be fulfilled;
  - d) determining from said prioritized listing of locations a suitable agent to fulfill said order; and
  - e) allocating said order to said suitable agent.
2. A computer-implemented method according to claim 1, wherein step a) comprises maintaining for each agent an individual current order file relating only to that agent.

3. A computer-implemented method according to claim 1, wherein step a) comprises maintaining a combined current order file relating to a plurality of agents, with said first location and first time identified for each such agent.
4. A computer-implemented method according to claim 1, wherein step b) comprises maintaining for each agent an individual prioritized location listing relating only to that agent.
5. A computer-implemented method according to claim 1, wherein step b) comprises maintaining a combined prioritized location listing relating to a plurality of agents, with each location being prioritized for one or more agents according to ability of the or each such agent to reach each location after said first time relating to the agent.
6. A computer-implemented method according to claim 1, further comprising the step of:  
  
updating the current order record for said identified agent with a new first location and first time at which said agent is expected to become free after fulfilling said order.
7. A computer-implemented method according to claim 1, wherein said step of allocating said order comprises
  - i) offering said order to said agent; and
  - ii) receiving confirmation of acceptance of the order from the agent.
8. A computer-implemented method according to claim 1, wherein said current order record identifies locations and times relating to all current orders assigned to said agent.

9. A computer-implemented method according to claim 1, wherein said listing of locations identifies the priority of each location with a time at which the agent is expected to be able to reach said location.
10. A computer-implemented method according to claim 1, wherein said listing of locations identifies the priority of each location with a priority identifier calculated from distance between each such location and said first location, and time between the current time and said first time.
11. A computer-implemented method according to claim 10, wherein said distance is a true geographical distance.
12. A computer-implemented method according to claim 10, wherein said distance is a distance calculated in a non-linear representation of an area including said locations.
13. A computer-implemented method according to claim 12, wherein said representation is selected from a grid of cells to which locations are mapped, a set of groups of locations, and a mesh of elements to which locations are mapped.
14. A computer-implemented method according to claim 1, wherein said locations are identified as cells within a grid to which locations are mapped
15. A computer-implemented method according to claim 1, wherein said locations are identified as groups of locations within a set of such groups.
16. A computer-implemented method according to claim 1, wherein said locations are identified as elements within a mesh of elements to which locations are mapped.

17. A computer-implemented method according to claim 6, further comprising the step of updating the prioritized listing for said identified agent when said order has been allocated, to take account of said new first location and new first time.
18. A computer-implemented method according to claim 1, wherein said first time is calculated from a journey time file which records expected journey times between locations.
19. A computer-implemented method according to claim 1, wherein said first time is input by an operator based on an expected journey time.
20. A computer-implemented method according to claim 19, wherein said operator is the agent to which the current order record relates.
21. A computer-implemented method according to claim 1, wherein the step of maintaining said current order record includes providing access to an agent to said current order record to edit the details recorded therein.
22. A computer-implemented method according to claim 1, wherein said current order file further includes details of an advance order, including a second location and a second time after said first time, at which said advance order is to be fulfilled, and wherein step d) includes the step of determining whether the agent is expected to be able to finish said new location-based order with sufficient time to fulfill said advance order.
23. A computer-implemented method of operating an ordering server for controlling location-based orders for a plurality of mobile agents, comprising the steps of:
  - a) maintaining a current order record identifying for each agent a first location and first time at which the agent is expected to become free to fulfill a new order;

- b) maintaining a prioritized listing of locations including both scheduled locations which an agent is currently due to visit and unscheduled locations which said agent is not currently due to visit, with locations in said listing being prioritized to rank both the scheduled and unscheduled locations for said agent according to availability of the agent to reach each location after said first time, said availability having been calculated for each location irrespective of whether or not said agent is currently due to visit a particular location in said listing; and
  - c) updating said current order record and said listing for an agent when a new order has been assigned to said agent resulting in a new first location and first time being identified.
24. An ordering server for allocating location-based orders to a plurality of mobile agents associated with said server, comprising:
- a) a current order file storage area for maintaining a current order file which identifies for each agent a first location and first time at which the agent is expected to become free to fulfill a new order;
  - b) a location priority listing storage area for maintaining a prioritized listing of locations including both scheduled locations which an agent is currently due to visit and unscheduled locations which said agent is not currently due to visit, with locations in said listing being prioritized to rank both the scheduled and unscheduled locations for said agent according to availability of the agent to reach each location after said first time, said availability having been calculated for each location irrespective of whether or not said agent is currently due to visit a particular location in said listing;
  - c) an input interface for receiving said location-based order and recording the location and time at which said order is to be fulfilled;

- d) a processor for determining from said prioritized listing of locations a suitable agent to fulfill said order; and
  - e) an output interface for allocating said order to said identified agent.
25. An ordering server according to claim 24, wherein said input interface comprises an operator interface for an operator to input details received from an ordering party.
26. An ordering server according to claim 24, wherein said input interface is selected from a web server hosting a user interface via which ordering parties can input order details, a Wireless Application Protocol (WAP) server hosting a user interface via which ordering parties can input order details, an Interactive Voice Response (IVR) unit via which a user can input order details and a Short Messaging Service (SMS) gateway for receiving SMS messages containing order details.
27. An ordering server according to claim 24, further comprising a map database correlating real geographical locations with location identifiers for use in identifying locations in said current orders file and said listing.
28. An ordering server according to claim 24, further comprising a journey times calculator for calculating an expected journey time between two locations.
29. An ordering server according to claim 24, further comprising an agent interface for an agent to access and edit said current orders file.
30. (cancelled)
31. (cancelled)
32. (cancelled)

33. (cancelled)
34. (cancelled)
35. A computer program product comprising a physical data carrier in machine readable form containing instructions which when executed in an ordering server cause said ordering server to:
- a) maintain for each agent a current order record identifying a first location and first time at which the agent is expected to become free to fulfill a new order;
  - b) maintain for each agent a prioritized listing of locations in the vicinity of said first location including both scheduled locations which an agent is currently due to visit and unscheduled locations which said agent is not currently due to visit, with locations in said listing being prioritized to rank both the scheduled and unscheduled locations for said agent according to availability of the agent to reach each location after said first time, said availability having been calculated for each location irrespective of whether or not said agent is currently due to visit a particular location in said listing;
  - c) receive said location-based order and recording the location and time at which said order is to be fulfilled;
  - d) determine from said prioritized listing of locations a suitable agent to fulfill said order; and
  - e) allocate said order to said identified agent.

36. A communications network comprising an ordering server for allocating location-based orders to a plurality of mobile agents associated with said server, comprising:
- a) a current order file storage area for maintaining a current order file which identifies for each agent a first location and first time at which the agent is expected to become free to fulfill a new order;
  - b) a location priority listing storage area for maintaining a prioritized listing of locations including both scheduled locations which an agent is currently due to visit and unscheduled locations which said agent is not currently due to visit, with locations in said listing being prioritized to rank both the scheduled and unscheduled locations for said agent according to availability of the agent to reach each location after said first time, said availability having been calculated for each location irrespective of whether or not said agent is currently due to visit a particular location in said listing;
  - c) an input interface for receiving said location-based order and recording the location and time at which said order is to be fulfilled;
  - d) a processor for determining from said prioritized listing of locations a suitable agent to fulfill said order; and
  - e) an output interface for allocating said order to said identified agent.



## **Evidence Appendix**

None.

## **Related Proceedings Appendix**

None.